THEMATIC SECTION:
WITTGENSTEIN AND EDUCATION

# Wittgenstein, Educational Research and the Capture of Science

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**ABSTRACT – Wittgenstein, Educational Research and the Capture of Science.** The author discusses the importance of Wittgenstein's thinking for the relativization of the scientific attitude in the philosophy of education, particularly when the social sciences tend to follow the model of the hard sciences in their research activities.
Keywords: **Wittgenstein. Naïve Scientism. Imponderable Evidence.**

**RESUMO – Wittgenstein, Pesquisa Educacional e a Captura da Ciência.** O autor discute a importância do pensamento de Wittgenstein para a relativização da atitude científica na filosofia da educação, particularmente quando as ciências sociais tendem a seguir o modelo das ciências duras em suas atividades de pesquisa.
Palavras-chave: **Wittgenstein. Cientificismo Ingênuo. Evidências Imponderáveis.**

This article is rooted in my puzzlement that in the field of the philosophy of education, and in the philosophy of social science more widely, there has been very little use of the philosophy of Ludwig Wittgenstein, and in my belief that he has much to offer as philosophers of education and academic educationalists more broadly. I will begin with a short description of the academic journey in which these thoughts took root and have strengthened over time.

In the university study of education undergraduate students in the UK are usually required to write a dissertation in their final year. This may contribute as much as 40% of their final year marks. Yet some 30 years ago in my own university – and we were not alone in this – there was little in their first-and second-year modules to prepare them in any systematic way for the writing of a dissertation. The result was that they either pulled together elements of the taught modules they had taken – typically in the history, psychology and sociology and philosophy of education – or fell back on some longstanding personal interest, for example in the injustices of the UK education system, the importance of outdoors education, the education of the emotions, the education significance of the films of Walt Disney. These did not necessarily result in bad dissertations, but the weaker ones tended to be characterised by superficiality and the fetishizing of empirical evidence, usually in the form of simplistic questionnaires sent to friends, family and practising school teachers, in place of sustained argument and in-depth reading of relevant theoretical literature.

Accordingly, a second-year research methods module was introduced in order to repair these deficiencies. Yet this brought with it problems which were in many ways just as bad as what it was meant to remedy. Every academic in the Education department, it seemed, insisted that his or her particular method should be represented in the module. The result was that students were presented with a bewildering array of research methods and approaches: randomised control trials, ethnomethodology, critical theory, action research, participant observation, grounded theory and many more – so many, in fact, that few of the 22 lectures in the module could be devoted to more than a single, relatively distinct topic as rival researchers jostled for space to advertise the importance of their particular approach. The students, unsurprisingly, tended to opt for the first method that they could understand, and then cast around for an educational issue or problem to which they could apply it – instead of what all the teachers of the module agreed was the more appropriate approach: to start with an interesting issue or problem and then think about how to investigate it. (I was tentatively asked if I would like to give a lecture on philosophical approaches: I fear I may have caused offence by explaining that you can't teach anyone to be even the most rudimentary philosopher in a 50 minute session.) The department currently boasts of the "diverse expertise" of its researchers, correctly pointing out that it stands "5th in the field of education nationally and joint 1st in the UK for world-leading research impact". Clearly it is doing something right, and I like and admire my colleagues.

I am only concerned to point out that there never seems to be any coherent vision of educational research as a whole, with little awareness of its roots in four centuries of the growth of science and the veneration of its methods, and next to no interest in how this has affected the ways in which educational research is conceived and practised today.

I return to these points below, after I have said a little more about my own academic journey. Around 25 years ago I was asked to take on the role of Director of Combined Social Sciences at my university. This was and still is an undergraduate programme which students put together for themselves from the various departments of the Social Science Faculty, with the option to take up to two modules from the Faculties of Arts and Sciences. As I moved into my new role, I was struck by two things. One was the high quality of the students, who in addition to their academic prowess came to university with an independence of spirit that this kind of degree appealed to. The second was that they had no core module or modules to hold their programme together and from which they could survey their field of study and reflect on the idea of "social science" which was what, at least nominally, they were students of. Accordingly, I launched a new compulsory first year module, "The discipline of social science", which examined the aspiration of the study of the social world to be some kind of science. We traced it from the scientific revolution of the late sixteenth and seventeenth centuries, through the Enlightenment and on to Darwin, Marx and Freud. I wanted above all for them to see how odd it was for the study of education, crime, social deprivation and so on to be thought of as a science: for the university departments in which they studied to be called social *sciences*. And I wanted them to develop a keen sense of the oddities and distortions that followed from uncritical acceptance of these conventions.

The module proved popular and the students asked for this "core" of the Combined Social Sciences degree, now increasingly taken as an option by students from other degree programmes, to be continued into their second and third years. I thought this was a splendid opportunity to help them think further about the idea of social science research, and in particular to understand the limitations of the various "research methods" modules that they were required to take in the social sciences departments (Politics, Anthropology, Sociology, Geography and so on) – modules that often suffered from the same limitations and distortions that were so evident in my own department's Educational Research Methods module. So "The philosophy of social science" came into being, a module whose topics included how we can understand ourselves and others, interpretation and hermeneutics, the narrative turn, and the claims of sociobiology – and, in particular, the module focused on *how we investigate* such topics and questions, challenging students' regular assumption that empirical research would be at the heart of our answers.

It was here, I felt, that Wittgenstein might prove particularly helpful. The students, and many of the lecturers they met, had not been *persuaded*, by any explicit arguments, that social science research ought to

follow the model of the hard or physical sciences. Rather they were, to echo Wittgenstein's way of putting it, captured by a picture (*Philosophical Investigations* §115: "a picture held us captive"). It is the "scientific" picture – science here including geometry and mathematics – that he has in mind. In his later and arguably more influential writing Wittgenstein is astute (albeit sometimes cryptically) about the fundamental confusions at the heart of many elements of the "scientific turn" that had captivated him in his earlier work, particularly the *Tractatus Logico-Philosophicus*, and he offers us well-judged ways of dissolving the pseudo-scientific myths that enthral and mislead many who regard themselves as members of the social science community. He is exceptionally and, it is sometimes tempting to say, uniquely helpful to us as we resist scientism, that is *faith* in science and excessive respect for science – particularly the expectation that every question is susceptible to scientific solutions and that scientific knowledge should be taken as the model for all knowledge. This of course is not to reject or even to denigrate science itself, though Wittgenstein, who was knowledgeable about science, having trained as an engineer and having worked as an aeronautical scientist in Manchester and elsewhere, often expresses extreme hostility to science in his later writings:

> It isn't absurd, e.g., to believe that the age of science and technology is the beginning of the end for humanity; that the idea of great progress is a delusion, along with the idea that the truth will ultimately be known; that there is nothing good or desirable about scientific knowledge and mankind, in seeking it, is falling into a trap (*Culture and Value*, p. 56).

It is usual to connect this with Wittgenstein's feelings about the way science and technology had contributed to the horrors of two world wars (he had witnessed these with his own eyes as a front-line soldier from 1914 to 1918), especially through the development of the atomic bomb, and with his apocalyptic phrase "the darkness of this time" in his Preface to the *Philosophical Investigations*. A deeper scepticism however is evident in such remarks as the following, also from *Culture and Value* (p. 40):

> What a curious attitude scientists have –: "We still don't know that; but it is knowable and it is only a matter of time before we get to know it!" As if that went without saying. –

This is a telling example of the naïve scientism that Wittgenstein would have us guard against.

It is important to emphasise that in teaching undergraduate and postgraduate students the task here, as often, is to shift their mind-set – to become sceptical of an entire intellectual framework – and not simply to offer them rational arguments against the idea that social science research has to be "scientific". Mind-sets, after all, can survive rational arguments with remarkable persistence. It was helpful too, I found, that in making his criticisms of scientism Wittgenstein does not speak – does

not speak down – to his readers with any sense of superiority, as if it was the easiest thing in the world to see through the veneration of science and scientific language and assumptions. Far from that, Wittgenstein is at pains to make clear that in his early philosophical work he himself was "captured" by scientific models and ideas that were making a major impact at the time. It is very salutary for students to realise that philosophical ideas do not move in some abstract and timeless realm but are strongly affected by (and we would like to think that they themselves affect) other ideas and movements of their time. Thus it was important for student to know that shortly before Wittgenstein's writing of the *Tractatus* (published in 1922) Albert Einstein, for instance, did important work in atomic theory, culminating in the publication of his "General Theory of Relativity" in 1916; that J.J Thomson was awarded the Nobel Prize in 1906 for his work in identifying subatomic particles in cathode rays; that Ernest Rutherford, Niels Bohr and Gilbert Lewis made important discoveries about the structure of atoms between 1909 and 1916; that Rutherford famously "split the atom" in 1919.

From this perspective it is not surprising that a trained scientist and engineer such as Wittgenstein, who had been fascinated by the philosophy of mathematics and corresponded with Gottlob Frege, perhaps the most eminent thinker in this field at the time, should be influenced by scientific and logico-mathematical "pictures". Essentially the *Tractatus* is a work of analysis dedicated to discovering elementary propositions, understood as the basic building blocks of language. Because those elementary propositions are analogous to the place of atoms in the world that the physical sciences investigate, Wittgenstein's theory in the *Tractatus* is often described as logical atomism. Wittgenstein did not use this phrase himself but the word *Sachverhalte* which he uses in the *Tractatus* and is usually translated as "states of affairs" is translated by some as "atomic facts" (Hunnings, 1988). Furthermore, Bertrand Russell, who was a major influence on Wittgenstein and acknowledged the influence Wittgenstein had on him in turn, was happy to call himself a logical atomist (Klement, 2004).

In continuing to try to free himself, and us, from being captives of the picture of science, Wittgenstein sets about developing new ideas about language, meaning and knowledge. In his early *Tractatus* he was driven by the search for a perfect language, pure and crystalline like the language of logic and science (or, we might say, the fantasy of such a language, and the mirage of all science as essentially the same). The radical difference between his earlier and later work is registered in the title of his two major publications. *Tractatus* is best glossed as "treatise", meaning a formal and systematic text. The full title that Wittgenstein gave this work was *Logisch-philosophische Abhandlung* (literally *Logical-Philosophical Treatise*). He adopted the Latin title for the English translation on the suggestion of the philosopher G.E. Moore, who was struck by the Spinozian flavour of the last part of the *Tractatus*: Spinoza's great work of moral philosophy had been titled *Tractatus Theologico-Politicus* (Moore had published his own work on moral philosophy in 1903

as *Principia Ethica)*. Perhaps in the Latinate title of the *Tractatus* there is also an allusion to Whitehead's and Russell's *Principia Mathematica, published in 1910, which itself pays homage to Isaac Newton's Philosophiae Naturalis Principia Mathematica* ("The mathematical principles of natural science", what we now call "science" being known as "natural philosophy" in Newton's time). These allusions suggest an austere and abstract text, which is what the reader encounters.

His later work, published after his death in 1953, is called, in English, *Philosophical Investigations* (*Philosophische Untersuchungen* in German). It is worth dwelling on the title for a moment. *Logical-Philosophical* has dropped the *Logical*, suggesting an approach that is less narrow and austere than the earlier *Tractatus*. Latin has been replaced by plain German (and, in turn, by plain English). Now Wittgenstein offers us less in the way of solutions and a fully developed theory than "investigations" – *Untersuchungen* could equally be translated as "study" or "enquiry". The reader is invited to accompany him on a journey, with no promise of a conclusion. The *Tractatus* was set out in carefully numbered statements, e.g. 4.1272, 4.12721, 4.1273, in a hierarchy such that every lower level proposition expands on or comments on the proposition directly above it in the hierarchy, and there is a sense that the removal of any one statement could bring the whole structure crashing down. The *Investigations* also consists of numbered paragraphs, but these are very different: they are allusive and thought-provoking, and are so far from being carefully sequential that the connections between them are often far from clear and there is sometimes a sense that they could be shuffled around without any great loss to the work as a whole.

One of Wittgenstein's (1972) most significant remarks in the *Philosophical Investigations* is as follows:

> [...] every sentence in our language is in order as it is. That is to say, we are not *striving after* an ideal, as if our ordinary vague sentences had not yet got a quite unexceptionable sense, and a perfect language awaited construction by us (*Philosophical Investigations* §98).

It is an idea that is repeated elsewhere in the *Philosophical Investigations*, for example at §§123-124 where we read "A philosophical problem has the form: 'I don't know my way about'… It [ie philosophy] leaves everything as it is". This needs some clarification, not least because it appears to limit the role of philosophy so severely as to make it effectively useless. What then are we to make of Wittgenstein's insistence that "every sentence in our language is in order as it is"? Surely, we come across sentences from time to time which strike us as not quite right, as not being in order. Here are some: "Social science, as the word 'science' implies, is a precise discipline". "Randomised control trials are the purest form of research". "Learning phonics skills is the first important step in learning to read". "Depression is an illness like any other". "Education should stream children on the basis of their natural ability". Wittgenstein's apparent endorsement of "every sentence in our language"

seems to suggest that each of the four sentences above is beyond reproach. Indeed, each of them might seem to some people at least to express simple common sense: to the lecturer in a Social Science Research Methods module, whose students reported her words to me with glee; to a claim made by a lecturer in a similar module – what "impurities" did she think were to be found in other forms of research?; to the writer of a UK Department for Education (2013) leaflet, *Learning to read through phonics: Information for parents*; to the doctor who spoke these words to a colleague of mine as he typed the prescription for anti-depressants; to the student who recorded her faith in the idea of "natural ability" in an undergraduate essay.

What then is not quite right, not in order in these sentences? The first two sentences show that the speaker holds a remarkably naïve theory about science as well as about social science: in particular one that shows no awareness of the way that the term "social science" came into being as theorists and researchers sought in the nineteenth century to dignify the new discipline with the aura of the physical sciences (see above, and Smeyers; Smith, 2014). The second is questionable. Phonics as a reading "method" is contentious (you would not know this from the Department for Education's leaflet). Depression may often be better understood as a response to difficult circumstances in a person's life, and to call it an illness immediately assumes that a medical doctor is the appropriate person to "treat" it as she would tonsillitis or gout, that is through medication. The idea that there is such a thing as "natural ability", a kind of stable attribute of the individual, perhaps expressed in terms of IQ, ignores the possibility that ability may be acquired, for instance through practice or good teaching. It is linked with the discredited theories of psychologists such as Cyril Burt. The important point here is that the challenge that can be made is essentially that the writer is in the grip of a *theory*.

The idea that "our language is in order as it is", then, is one more warning that in our ordinary lives there is a danger in looking for an ideal or perfect language: particularly one strongly coloured by theories, scientific or otherwise. When we are engaged in science, mathematics, logic or any highly specialised activity things are of course different: then we need specialised language in which words, symbols and phrases have carefully defined meanings. Otherwise there could be no progress in those disciplines, nor dialogue between specialists in them. But our ordinary language, for the most part, does not need to be replaced by something more "scientific". We can talk of the weather "not knowing what it's trying to do" and those to whom we are speaking will understand us well enough and not query the implication that the weather possesses cognition and volition. We can enjoy the distinctive smell of what we call the good sea air even if a biologist correctly informs us that much of that smell comes from dimethyl sulphide released by bacteria eating dying photoplankton. We can say we are standing on solid floor even if "we have been told by popular scientists that the floor on which we stand is not solid, as it appears to common sense, as it has been dis-

covered that the wood consists of particles filling space so thinly that it can almost be called empty" (*The Blue Book*, 1978, p. 45).

It is worth quoting this passage further. Wittgenstein (1978) continues:

> This is liable to perplex us, for in a way of course we know that the floor is solid, or that, if it isn't solid, this may be due to the floor being rotten but not to its being composed of electrons. To say, on this latter ground, that the floor is not solid is to misuse language. For even if the particles were as big as grains of sand, and as close together as these are in a sandheap, the floor would not be solid if it were composed of them in the sense in which a sandheap is composed of grains. Our perplexity was based on a misunderstanding; the picture of the thinly filled space had been wrongly *applied*. For this picture of the structure of matter was meant to explain the very phenomenon of solidity.

That is to say: the scientist who tells us that the floor is not "really" solid, since it is composed of electrons, "misuses language": he in fact assumed the common meaning of "solidity", which he now wants to replace, in his explanation of it. Or we might put it like this: he offered to explain solidity to us, but now he is trying to *explain it away*.

Perhaps I can illustrate Wittgenstein's insistence on the way that our ordinary language is "in order" with the help of Clare, a fourteen-year-old girl in Penelope Lively's novel *The House in Norham Gardens* (Lively, 1974). Clare's teacher, Mrs Cramp, is criticizing – not unkindly – Clare's essay for containing phrases like "sort of" and "or anything", and generally being "messy": "So what I really wanted to say was that you must remember that language is an instrument, Clare. An instrument to be used precisely". Later the same day Clare is back at home. Her friend Liz has come to tea. Clare reflects on her conversation with Mrs Cramp:

> 'Language', said Clare to Liz, 'is an instrument. You have to use it precisely. Like a screwdriver or something. Not just bash around vaguely?'
> 'What *are* you on about?'
> 'But the trouble is that people don't. They say things like 'quite' and 'rather' and 'ever so many' and 'by and large' and 'much of a muchness' and 'quite a few'. Now what do you suppose a person means when he says 'quite a few'?'
> Liz said, 'It would depend what he meant quite a few of. Bananas, or miles, or people living in Manchester'.
> 'Years'.
> 'Then it could mean anything'.
> 'Quite', said Clare (p. 60-62).

There are three other major elements in Wittgenstein's dissatisfaction with the influence of the scientific "picture". The first is what he calls "our craving for generality" (*Blue Book*, p. 18). We might think here of the widespread tendency these days to suppose that explanations will

be found "in the genes" for a wide range of aspects of human behaviour, from Attention Deficit Hyperactive Disorder (ADHD) to criminality. Or we might think of the way that some people are excited by the expectation that neuroscience will supply the universal key to our understanding of human learning – and thus in the end to our understanding of education. Wittgenstein writes that by "our craving for generality" he means

> The method of reducing the explanation of natural phenomena to the smallest possible number of primitive natural laws [...] Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer questions in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness. I want to say here that it can never be our job to reduce anything to anything, or to explain anything (*ibid*.).

The idea that it is not our job (as philosophers) to explain anything may sound strange, but this is a second aspect of Wittgenstein's escape from the capture of science. It is a matter of doing justice to the fact that not all understanding and knowing comes down to explaining. In science it often does. We explain someone's slurred speech: he suffers from a particular condition (perhaps he has had a stroke) of which this is a symptom. We explain the distinctive flora and fauna of Australasia: that continent became separated from the great land-mass that we call Pangaea at an early stage when that land-mass began to divide, and so Australasia had a long time over which its particular flora and fauna could evolve without external influence. But in social science our understanding and knowledge typically take a different form. When we seek to understand puzzling behaviour in a strange culture (the way children dress up on the last day of October and go round houses demanding treats and threatening "tricks", say) we are not asking what caused the behaviour: we are asking what it *means*. The rituals of marriage, of university graduation ceremonies, or of a game such as football are not for the most part to be explained in terms of what brought them about. To understand, to make sense of these activities, is to grasp that they are constituted by "rule-governed behaviour" or conventions, such that to understand the activities is simply to grasp these rules or conventions.

A third aspect of Wittgenstein's escape from the capture of science is that in his later work he has a more generous conception of knowledge than he did in the *Tractatus*. In *On Certainty* (Wittgenstein, 1961, p. 260) he writes "I would like to reserve the expression 'I know' for the cases in which it is used in normal linguistic interchange": that is to say, scientific discourse or "interchange" is no longer to be taken as the model or paradigm with all the restrictions which that would imply for our grasp of what does and what does not count as knowledge. Let me give a vivid and, I think, rather moving example of this non-technical sense of "knowledge" from the contemporary UK.

A seller of sportwear called Sports Direct has been the subject of UK government investigation following complaints that it paid the workers at its warehouse less than the minimum wage; that staff there were penalised for matters such as taking a short break to drink water, and for taking time off work when they were ill. The investigation was conducted by the Select Committee of the UK Government's relevant department, which is called Business, Innovation and Skills (BIS), following earlier revelations by BBC journalists. The Chair of the Select Committee, Iain Wright MP, appeared on the BBC programme Inside Out on 10 October 2016. He spoke about how workers at the warehouse complained that they were "treated like cattle" and talked about the distress their working conditions had forced them to endure. He described them as "incredibly brave" for coming forward to give evidence to the journalists who first uncovered the story. Of course, it might be asked how much credence should be attached to the stories the workers told. After all, they might have exaggerated their distress, perhaps in order to win compensation from the company. Iain Wright had little doubt of the answer: "When someone's looking at you in the face, and crying, and saying 'nobody's listening to me' … we knew from looking in their eyes that they were telling the truth".

We might think that before we can say we *know* the workers are telling the truth there should be more scientific ways of establishing the veracity of their testimony, such as lie detector tests, footage from CCTV in the warehouse, or at least the cross-examination of witnesses, and corroboration of their accounts by other witnesses. Against such demands for greater certainty – indeed for what we might call hyperbolic certainty – we have Mr Wright's calm assurance: "*We knew from looking in their eyes that they were telling the truth"*. In similar vein Wittgenstein writes that there is such a thing as "imponderable evidence" (*Philosophical Investigations* p. 228): that is, evidence that cannot be precisely calculated, weighed and measured, but which is good evidence, nonetheless.

> Imponderable evidence includes subtleties of glance, of gesture, of tone … I may recognize a genuine loving look, distinguish it from a pretended one (and here there can, of course, be a "ponderable" confirmation of my judgment). But I may be quite incapable of describing the difference (Wittgenstein, 1972).

If I may offer a personal example here, I was once present at a common room discussion of what academic tutors should expect by way of good evidence when a student seeks extra time for the writing of her essay on the grounds that (say) she has been unwell, or worried by problems her parents are experiencing. Surely, said one colleague, we should at least ask for a doctor's letter in the first case, and something comparable (evidence of her claim that her father has lost his job and the family now has major financial problems) in the other. One colleague noted that in another department of the university students taking time off to

attend a funeral were required to hand in an "order of service" from the church or crematorium, which would record the name of the deceased and the date of the service. Discussion became increasingly polarised, with, in the last example, one colleague saying that the student could easily fabricate such documents on her computer (an instance of what I described above as the demand for hyperbolic certainty), while others were appalled by the inhumanity of such an exhibition of lack of trust at what would be a very distressing time for the student. I commented that one tends to just *know* whether a student is telling the truth in such circumstances. I might have said we know *from looking in her eyes*. I fear that the seekers of hyperbolic certainty were not impressed by this.

Yet isn't this what the good social science researcher knows perfectly well? She talks with nine-year-olds about their experiences of the culture of assessment and testing at school. How does she know whether she is hearing the truth, or what they think they are supposed to say? The anthropologist records what the natives say about the traditions of the cock-fight in Bali, but what is there to prove that this isn't just the story they always tell visitors (it fits with Europeans' prejudices and makes them happy, and the islanders are kindly people who do not want to disappoint the tourists)? Or she attempts to make sense of the famous horse races in Siena, Italy (the *Palio*), but suspects that what she hears reflects the different loyalties of people in the various competing *contrade,* or city districts. If she concludes that there is no single, incontrovertible story to be unearthed she knows this too mainly *from looking in the eyes* of those she speaks with.

I noted at the beginning of this paper that writers in the philosophy of education, and in the philosophy of social science more widely, have made very little use of Wittgenstein's ideas. Perhaps we should not be too surprised by this: after all, Wittgenstein has very little to say explicitly about education, the various social sciences as we know them today were not as prominent in the universities of the first half of the twentieth century as they are now, and in any case Wittgenstein shows little awareness of them. Perhaps the picture of science is now so pervasive that we simply cannot resist it and accordingly distrust its critics. Academics are under increasing pressure, in Anglophone countries at least, to bring in research grants, which in the minds of many university managers are reliable, measurable proxies for the quality of the academic who wins them. Such grants typically pay the salaries and expenses of research assistants, who are naturally employed on conducting interviews and surveys and analysing data, that is to say on empirical work. (It is rare for a philosopher to be given a grant in order to read and think.) Randomised control trials (RCTs) are often now regarded as the apogee of social science research (see above): we are so thoroughly in the grip of the picture of science that we do not stop to notice that RCTs have their original home in medicine, and derive their prestige largely from that.

Nevertheless, it is remarkable that theorists of educational research, and philosophers of social science, who are generally interested

in the kind of knowledge at stake in their fields of interest, make so little use of Wittgenstein. There is space for only a few examples[1].

Vernon Pratt's (1978) *The Philosophy of the Social Sciences* mentions Wittgenstein in two endnotes only. One is to the effect that the *Philosophical Investigations* "may also be read as offering a defence of logical positivism". The other notes that "Concepts are given their sense by their role in a way of living, and, since ways of living differ, so do concepts", with the suggestion that a kind of conceptual relativism is thus implied. Martin Hollis's (1994) *The Philosophy of Social Science: An Introduction* tells the reader that the *Philosophical Investigations* "makes fertile use of the notion of a 'game' in discussing human action" (p. 18) and helpfully connects this with the idea of rule-governed activity, which is expanded upon later in the book (p. 152-157). Brian Fay's (1996) *Contemporary Philosophy of Social Science* has just two references, one explaining that those being interpreted and those interpreting them must both be persons, and citing Wittgenstein's well-known remark that if a lion could talk we would not be able to understand what it said (p. 26). The other employs an analogy from the *Tractatus*: an eye looking out at the world will not see itself (p. 42). Michael Root's (1993) *Philosophy of Social Science* makes no mention of and no reference to Wittgenstein at all. The only introductory textbook on the philosophy of social science I know that draws substantially on the work of Wittgenstein is Roger Trigg's (1993) *Understanding Social Science*, but although there are over a dozen references to Wittgenstein, they nearly all relate only his discussions of rule-governed activities and forms of life. All of these books, I must emphasise, are in most respects excellent introductions to the philosophy of social science, and my students and I use them in the module on that subject that I teach.

It would be tedious and perhaps unfair to list examples of literature on educational research that show no familiarity with Wittgenstein. If Wittgenstein is deeply helpful to us as educationalists and social scientists in liberating us from the "capture" of science, as I have argued in this chapter, perhaps the fact that his ideas are so little represented in the standard literature on research in these fields goes some way to explain why our liberation from the language and fantasies of science is still far from being complete[2].

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## Notes

1 It has in any case been difficult to access as many texts as I would have liked: this paper has been written during the period when my university library, in common with others in the UK, has been closed because of the Covid-19 virus.

2 I have here drawn extensively on Smith (2018; 2020a; 2020b).

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